

Hants Border Wastewater Treatment Plant

Information Package
26 April 2021



Introduction

Unfortunately, the April 26, 2021 Public Information Meeting (PIM) has been postponed until further notice due to recent Public Health directives.

In lieu of the PIM, we have prepared this information package, which is based on the presentation "slide deck" that was prepared for the PIM.



Agenda

- Lagoon Treatment Basics
- What Happened to Hants Border STP?
- Mitigation Measures
- Where you can help?
- Conclusion
- Contact for Questions

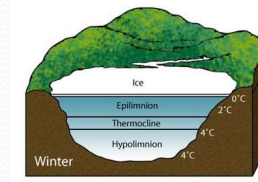
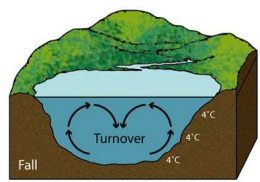
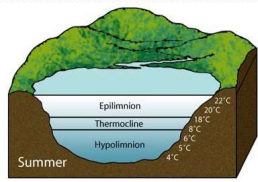
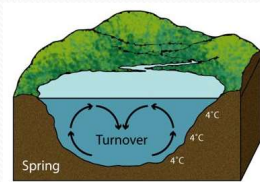
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Lagoon Treatment Basics



Lagoons Behave Similar to Lakes



Undergoes Seasonal Turnover

- Usually May and Oct
- Can last 1-3 weeks
- Some odour but usually not overly strong and short duration

Water column has multiple layers

- Anaerobic bacteria in bottom layers
- Aerobic bacteria reside in top layers
 - Acts as a blanket trapping odours



Lagoon Treatment Basics



- Well suited to this type of wastewater
- Aerobic bacteria consumes solids
 - 30-40 day process (typical)
- Main factors in bacteria health:
 - Sunlight
 - Temperature
 - Oxygen content in lagoons
 - Wastewater quality (aka their food)
- Final disinfection by ultraviolet light before discharge



What happened to Hants Border Treatment Plant?



Impact of COVID-19

- Waste streams have changed as a result of COVID-19
 - Working from home = more waste generation
 - Supply Chains have been impacted = different products being used in households and businesses
 - Use of Anti-bacterial products has increased
- Reports across North America that lagoons have been impacted as a result of COVID-19



October Upset

- Seasonal turnover in October
- Change in lagoon colour, odour observed
- Large amount of sludge and trash began to float in the first lagoon
- Lab testing confirmed change in conditions that did not match past performance



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Lagoons → Septic

- Low dissolved oxygen in the water
- Excess food source, with a low healthy bacteria count
- Excess trash and FOG (fats, oils, grease)
- Created odour
 - Nitrogen compounds -> Ammonia
 - Carbon compounds -> Methane
 - Sulfur compounds -> Hydrogen sulfide
- Deer, muskrats, birds stopped visiting



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Winter Stagnation

- Plant not able self-correct as normal
 - Biological activity decreases in the winter (less sunlight, lower temperatures)
- Lack of frost in ground limited mitigation options
 - Lagoon berms, access roads too soft for heavy equipment



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Mitigation Measures



We are working on it...

Staff working on number of interim and mid-term measures to mitigate items that are within our control

Working with internal/external expertise on mitigation measures already implemented and being considered

Some factors we cannot readily deal with



Steps to Mitigate

December

- Diver in to inspect and clean aerators

January

- Excavator onsite to remove garbage, cattails from edge of lagoons

March

- Engaged experts in Halifax and Ontario
- Laboratory testing using in-house and 3rd party labs
- Boat work to clean, inspect, replace aerators
- Additional aerators installed in lagoons
- Engagement with West Hants; influent investigation
- Controlled flush of lagoons to remove septic water



Steps to Mitigate

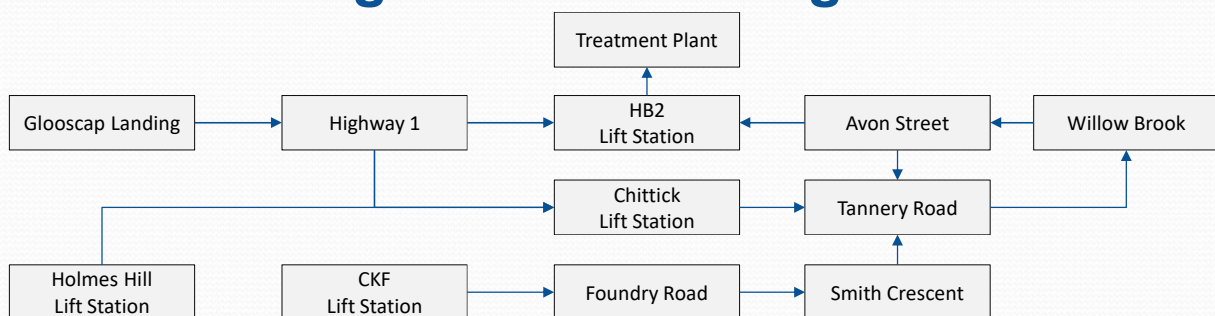
April

- Additional aerators installed in lagoons
- Continued Influent investigation
- Engagement with Industry Experts (California, Montreal, Waterloo, Halifax)
- Contingency to re-seed the plant with fresh bacteria



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Understanding What's Entering STP



- 50 samples collected in March and April to assess the quality of influent
- Chicken Hatchery, CKF, Restaurants, Businesses, Residential, ...
- Review of infrastructure maps from 1969 to current day
- Collaboration with Municipality of West Hants



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Signs of Health Returning (mid-April)



- Muskrats, deer, rabbits, ducks, birds have returned to the area
- Evidence that algae is starting to grow in the first lagoon
- Odour seems to be switching back to “sweet septic”, which is a step in the right direction

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Future Remedial Work

- Public Awareness on wastewater treatment
- Continue investigation of influent with West Hants Municipality
- Review treatment plant infrastructure
 - Screening/removal of disposable wipes and other debris
- Review Internal Practices
 - Where can we improve response, communications
- Scheduled upgrades to the HB2 Lift Station
- Re-seeding the plant with new bacteria (4 month process)

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Where You Can Help



Spread the Word!

What goes down your drain...

- Stays in your community
- Hurts Aerator performance
- Harms lagoon bacteria



NEVER put these in your toilet or down your drains

- Disposable wipes, feminine hygiene products, condoms
- Chemicals such as ammonia or acids
- FOGs – fats, oil, grease



Conclusion

We appreciate and apologize for the impact odours have had

- We cannot guarantee that this will never happen again...but
 - 1st occurrence in over 20 years (similar to other STPs)



Conclusion

- Working to prevent and mitigate future events
 - Increase community awareness
 - Improve our response plan, internal practices





Please contact:

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